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COOPERATION AMONG ONTARIO UNIVERSITY LIBRARIES

by

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and

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PREFACE

In the Fall of 1980, the Council of Ontario Universities appointed a Steering Committee to Review Library Cooperation with joint membership from the Board for Library Coordination and the Ontario Council of University Libraries. The Joint Steering Committee recommended the engagement of a consultant and provided terms of reference, procedures, a budget, and a schedule. The recommendations of the Steering Committee were approved by the Executive Committee of COU in the Spring of 1981.

The approved terms of reference for the study were:

1. To review and evaluate the history, development, and present state of library cooperation among the Ontario universities, including that of a regional nature, against the background of the guidelines established in 1968 by the Committee of Presidents (now COU) and the Committee on University Affairs (now OCUA):

   (i) That each university library would be essentially self-sufficient in the provision of library services for undergraduate use.

   (ii) That the university libraries would be effectively interdependent in the provision of service for research and graduate use.

   (iii) That there would be appropriate coordination and centralization of technical processes, automation being introduced when appropriate.

2. To compare the Ontario experience with successes and failures in other comparable jurisdictions.

3. To consider the relationship of the Ontario university library system to the developing national library system.

4. To recommend guidelines for library cooperation in the 1980s in the light of the anticipated evolution of the university system.

5. To make recommendations on cost-beneficial practical cooperative initiatives for the Ontario university libraries, including organization and governance of cooperative projects.

The Steering Committee selected Bruce Peel, Librarian to the University, and William J. Kurmey, Dean of the Faculty of Library Science, University of Alberta, to undertake the study.

When the consultants' report was received in June 1982, Council agreed that it should be forwarded to the Ontario Council of University Libraries, the Board for Library Coordination, and member institutions for comment. In January 1983, the Steering Committee reviewed responses received to date and prepared advice to COU on the disposition of the report. At its meeting on 11 March 1983, Council adopted a series of recommendations arising out of the report. These recommendations are summarized in the Circuletter which follows this preface.

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Circuletter 3328

To: Members of Council
Ontario Council of University Libraries
Board for Library Coordination

From: Deputy to the Executive Director

Subject: COUNCIL DECISIONS ON STUDY OF COOPERATION AMONG ONTARIO UNIVERSITY LIBRARIES

At its meeting on 11 March 1983, the Council of Ontario Universities approved the following recommendations arising out of the Study of Cooperation among Ontario University Libraries.

RECOMMENDATION 1: GUIDELINES FOR LIBRARY COOPERATION:

that the 1968 Guidelines be revised by retaining the first two as still relevant, discarding the third, and adding three new ones. The guidelines would then read:

(i) that each university library be essentially self-sufficient in the provision of library services for undergraduate use;

(ii) that the university libraries be effectively interdependent in the provision of service for research and graduate use;

(iii) that the libraries continue their efforts to cooperate on practical projects of demonstrated utility and initiate new projects as needs and opportunities arise;

(iv) that the libraries work towards a computerized network which permits shared and distributed access for the exchange of bibliographic data and location information;

(v) that the libraries maintain a watching brief on technological experimentation and development at the National Library and elsewhere for possible application in Ontario;

(vi) that the libraries be encouraged to develop both individual and collective strategies that would facilitate the coordination of research resources in the light of developments arising from the changing environment of the universities.

RECOMMENDATION 2: REGIONAL COOPERATION

that the highly commendable achievements in provincial-wide cooperation and in coordination of resources and services be continued, while at the same time regional projects among libraries in reasonable proximity (1-2 hours driving time), having proven cheap to operate and closely tailored to regional needs, be recognized as a part of the larger cooperative system.

RECOMMENDATION 3: SETTING OBJECTIVES AND MONITORING OF PROJECTS

that every cooperative project should include means of evaluating its effectiveness; in new cooperative ventures prerequisites should be: (a) that objectives and a time line be set out so that the project can be monitored and on termination properly evaluated and (b) that benefits to be attained relative to cost and effort be clearly articulated.

RECOMMENDATION 4: NATIONAL LIBRARY EXPERIMENTATION

that OCUL libraries continue to watch closely technological experiments being conducted by the National Library - particularly those which will facilitate the interchange of bibliographic data through computer linkage - for possible application in Ontario.

RECOMMENDATION 5: COMMON COMPUTER PROTOCOL

that libraries continue to work towards and implement a common computer protocol so that OCUL libraries having a variety of installations may access each other's data bases.

RECOMMENDATION 6: DIRECT USER ACCESSIBILITY TO DATA BASES

that in relation to providing computer based library services, it is recommended that the long-term goal of libraries providing computer based services should be direct user accessibility to all library data bases in Ontario university libraries through local library facilities, and as a corollary, ensure that such access does not place upon the library user <u>additional</u> complexity for interacting with data bases located in libraries other than his own.

RECOMMENDATION 7: INCENTIVES FOR COMPUTER TRAINING

that in view of the need for more skilled personnel knowledgeable in both library science and computer science, in order to achieve wide exploitation of computer based technology, that library administrators continue to offer training to staff which will facilitate their participation in these developments.

RECOMMENDATION 8: SITE AND COMPACT STORAGE STUDY

that the BLC in collaboration with OCUL undertake a study of site space requirements on each campus, for probable expansion of the central library building over a time span of fifty years, and of the need for compact storage for less used materials, either in a provincial storage building or on each campus.

(This recommendation is endorsed subject to the report of the currently working COU Special Committee on the Feasibility of an Ontario Universities Records Centre.)

RECOMMENDATION 9: DIALOGUE WITH UTLAS

that although less than half of the OCUL libraries subscribe to the service offered by UTLAS, nevertheless this utility will continue to have an impact on the Ontario (and Canadian) library scene; for that reason OCUL should maintain a watching brief on the development of the utility.

RECOMMENDATION 10: BOARD FOR LIBRARY COORDINATION

that the Board for Library Coordination be given revised terms of reference, as follows:

1. To advise Council on general policy issues affecting the development of the Ontario university library system;

2. To develop cooperative strategies, consistent with the COU guidelines for the Ontario university library system, that will facilitate the coordination of library research resources in the light of changing circumstances of the universities;

3. To consult regularly with the Ontario Council of University Libraries;

4. To communicate regularly with Ontario university library committees; and

5. To report regularly to the Council of Ontario Universities.

The following understandings relate to the above approved recommendation:

- the current mixed membership of the Board will be retained; and

- various means should be employed to achieve ongoing cooperation with OCUL, including formalization of recent informal practice for the chairman of each group to have ex officio membership on the other body, exchange of agendas and minutes, and occasional joint

meetings. A joint meeting should be held after Council deals with this report, with the purpose of establishing the basis for future cooperation.

The report on the study will be published shortly, including this record of the decisions of Council.

G. Grant Clarke

GGC

TABLE OF CONTENTS

Glossary
Preamble
Recommendations

1. Introduction..... 1
2. The library milieu in the 1960's..... 3
3. Adding and assessing collections..... 5
4. Sharing library resources..... 7
   - 4.1 IUTS..... 8
   - 4.2 ILL..... 10
   - 4.3 IUBP..... 13
   - 4.4 Directory..... 14
   - 4.5 Clearinghouse experiment..... 14
5. Toward a provincial union catalogue..... 14
   - 5.1 UNICAT..... 16
6. The UTLAS bibliographic utility..... 19
7. Union lists..... 21
   - 7.1 Government publications (CODOC)..... 21
   - 7.2 Serials (CUSS)..... 22
   - 7.3 Microforms..... 25
   - 7.4 Maps..... 26
8. Cooperative cataloguing..... 27
   - 8.1 Shared cataloguing..... 28
9. Cooperation among administrators..... 29
10. Cooperation in other areas of Canada..... 30
    - 10.1 TRIUL..... 30
    - 10.2 Alberta Standing Committee on Library Matters..... 31
    - 10.3 COPUL..... 32
    - 10.4 CREPUQ..... 33
    - 10.5 Association of Atlantic Universities..... 33

11. Tabulation of studies and projects in Ontario..... 33a
12. An evaluation of library cooperation in Ontario..... 34
13. Issues which need to be addressed..... 42
13.1 Review of 1968 guidelines..... 42
13.2 Assessment of funding for materials acquisitions... 44
13.3 National Library experimentation..... 45
13.4 Effect of rapid technological changes..... 46
13.5 Long-term space and storage planning..... 48
13.6 Clarification of relationships..... 49
Appendix: The impact of the new technology..... 51

At present the three agencies with involvement in university library developments in Ontario are the COU, its BLC, and OCUL.

GLOSSARY

AJC	Advisory Joint Council
BLC	Board for Library Coordination
CACUL	Canadian Association of College and Research Libraries
CATSS	Catalogue Support System
COALS	Coordination of Academic Library Services
CODOC	Cooperative Documents Project
COU	Council of Ontario Universities
CPUO	Committee of Presidents of Universities of Ontario
CREPUQ	La Conférence des recteurs et des principaux des universités du Québec
CUSS	Cooperative Union Serials System
GARLIC	Special Subcommittee on Assessment of Graduate and Research Library Requirements
ILL	Interlibrary Loans
IUBP	Interuniversity Borrowing Project
IUTS	Interuniversity Transit System
OCGS	Ontario Council on Graduate Studies
OCUA	Ontario Council on University Affairs
OCUL	Ontario Council of University Libraries
OLC	Office of Library Coordination
OUBCP	Ontario Universities' Bibliographic Centre Project
OULCS	Ontario Universities' Library Cooperative Systems
UNICAT	Union Catalogue
UTLAS	University of Toronto Library Automation Systems

PREAMBLE

The current survey of cooperation among university libraries in Ontario was intended to determine if in the intervening years since the establishment of guidelines in 1968 the libraries were cooperating fully and effectively. The evidence presented in the following sections suggests that in no other legislative jurisdiction on the North American continent have so many cooperative projects been implemented among university libraries. The survey notes some areas of concern, and makes recommendations relative to these.

RECOMMENDATIONS

1. *Guidelines for library cooperation*

that the 1968 Guidelines be revised by retaining the first two as still relevant, discarding the third, and adding three new ones. The guidelines would then read:

(i) *that each university library be self-sufficient in the provision of library services for undergraduate use*

(ii) *that the university libraries be effectively interdependent in the provision of service for research and graduate use*

(iii) *that the libraries continue to cooperate on projects which have demonstrated their usefulness*

(iv) *that the libraries work toward a computerized open network for the exchange of bibliographic data and local information*

(v) *that the libraries maintain a watching brief on technological experimentation and development at the National Library and elsewhere for possible application in Ontario*

(Reference: pp. 42-44)

2. *Regional cooperation*

that the highly commendable achievements in provincial-wide cooperation and in coordination of resources and services be continued, while at the same time regional projects among libraries in reasonable proximity (1-2 hours driving time), having proven cheap to operate and closely tailored to regional needs, be recognized as a part of the larger cooperative system.

(Reference: pp. 11,13, 24)

3. *Setting objectives and monitoring of projects*

that in every cooperative project there be continuing evaluation of its effectiveness; in new cooperative ventures prerequisites should be: (a) that objectives and a time line be set out so that the project can be monitored and on termination properly evaluated and (b) that benefits to be attained relative to cost and effort be clearly articulated.

(Reference: pp. 40-41)

4. *Assessment of adequacy of library funding*

that OCUL, in collaboration with BLC, examine the effects of inflation on the ability of acquisitions budgets to provide the library materials required to support the objectives of the universities, and if the problem warrants action, that the BLC campaign for adoption of a strategic plan for long-term funding.

(Reference: pp. 44-45)

5. *National Library experimentation*

that OCUL libraries watch closely technological experiments being conducted by the National Library - particularly those which will facilitate the interchange of bibliographic data through computer linkage - for possible application in Ontario.

(Reference: pp. 45-46)

6. *Common computer protocol*

that libraries work toward a common computer protocol so that OCUL libraries having a variety of installations may access each other's data bases.

(Reference: pp. 37, 53-54)

7. *Direct user accessibility to data bases*

that in relation to providing computer based library services, it is recommended that the long-term goal of libraries providing computer based services should be direct user accessibility to all library data bases in Ontario University libraries through local library facilities, and as a corollary, ensure that such access does not place upon the library user additional complexity for interacting with data bases located in libraries other than his own.

(Reference: pp. 37, 53-54)

8. *Incentives for computer training*

that in view of the need for more skilled personnel knowledgeable in both library science and computer science, in order to achieve wide exploitation of computer based technology, that library administrators offer incentives to staff to take computer training.

(Reference: pp. 47, 51)

9. *Site and compact storage study*

that the BLC in collaboration with OCUL undertake a study of site space requirements on each campus, for probable expansion of the central library building over a time span of fifty years, and of the need for compact storage for less used materials, either in a provincial storage building or on each campus.

(Reference: pp. 48-49)

10. *Dialogue with UTLAS*

that although less than half of the OCUL libraries subscribe to the service offered by UTLAS, nevertheless this utility will continue to have an impact on the Ontario (and Canadian) library scene; for that reason OCUL (perhaps in conjunction with CARL) should open a dialogue with the new management to ascertain the philosophy and long-term plans of the utility.

(Reference: pp. 18-21, 36)

11. *UNICAT records to National Library*

that the BLC ask UTLAS to fulfill the wishes of the members of the former UNICAT consortium that their machine-readable catalogue records be transferred at an early date to the National Library.

(Reference: p. 37)

12. *Function and Membership of the Board of Library Coordination*

that the function and membership of the Board of Library Coordination be examined and redrafted with a view to the Board assuming a more interpretive and supportive-of-libraries role.

(Reference: pp. 49-50)

COOPERATION AMONG ONTARIO UNIVERSITY LIBRARIES

1. INTRODUCTION

In order to understand university library cooperation in Ontario the reader needs some familiarity with the principal agencies involved, as otherwise he or she may become lost amid the tangle of successive and often entwined councils, boards, and committees. The summary which follows is confined to the principal agencies which have been responsible for broad policy and governance.

In June 1965 the Committee of Presidents of Universities of Ontario (CPUO) established a subcommittee on the Coordination of Academic Library Services (COALS). A year and a half later the Commission to Study the Development of Graduate Programmes in Ontario Universities (chaired by Dr. J.W.T. Spinks) presented its report, a document which had a profound effect on post-secondary education in the province. The Spinks report was examined by COALS (at that time chaired by Professor C.F. Klinck) and the Advisory Committee on Graduate Studies; the two committees agreed with the basic recommendation which pertained to library service.

In June 1967 the Committee of Presidents approved the setting up of an Advisory Joint Council on the Coordination of University Library Research Facilities. This Advisory Joint Council (AJC) was to consist of all members of the Ontario Council on Graduate Studies and the Ontario Council of University Libraries (OCUL). The latter was the successor to COALS, the earlier librarians' body.

In 1968 at a joint meeting of the Council of Ontario Universities (COU) and the Committee on University Affairs (CUA) guidelines were laid down for an Ontario university library system. These were an elaboration and formalization of the principle enunciated by Dr. Spinks that the collections of all research libraries were a provincial resource; this implied coordination. The 1968 guidelines remain the directives under which university libraries in the province cooperate.

The Advisory Joint Committee hired a consultant to develop plans for a proposed bibliographic centre. H. Duncan Walls, appointed in January 1968, made his report one year later.

OCUL on considering the report was of the opinion that some aspects relative to implementation of the recommendations had not been sufficiently developed for practical application. OCUL therefore proposed the creation of a research and planning office in preparation for the establishment of a bibliographic centre. C. Donald Cook was appointed planning officer of the Ontario Universities' Bibliographic Centre Project (OUBCP).

In 1971 the Council of Ontario Universities (COU), successor to the Committee of Presidents, decided to create an Office of Library Coordination (OLC) as a successor to the planning office for OUBCP. The new office was assigned supervisory responsibility for a number of cooperative projects of the libraries, the major one being UNICAT. The Office of Library Coordination functioned until October 15, 1980 when it was closed.

The office was under the direction of a new body, the Board for Library Coordination (BLC). The earlier Advisory Joint Council (AJC) had proved too large and unwieldy to give much guidance to a planning office. The membership of the Board consists of representatives of OCUL, OCGS, and the professoriate. It is this body which reports on library matters to COU.

2. THE LIBRARY MILIEU IN THE 1960's

Late in the decade of the 1950's the first wave of post-war babies reached their mid-teens and began to knock at the doors of academe. Demographers may have predicted the number of persons reaching university age in the years after 1959, but educators failed to anticipate the higher percentage of young people who would elect to attend university. With the launching of Sputnik by the Russians in October 1957 governments in the western world perceived advanced scientific and technological education as essential for national progress.

In Canada, earlier generations of students wishing to take training at the doctoral level, and even at the masters level in some disciplines, had tended to go to American and British universities. Now the need to expand both the facilities and the course offerings of Canadian universities became obvious to both educators and politicians.

Suddenly public money was forthcoming for the opening of new universities and colleges, and for the development of new teaching programmes, particularly at the masters and doctoral levels, in older

institutions. Perhaps in no province, or state in America with the possible exception of New York State, was government support more generous than in Ontario.

The many new academic programmes, once in place, especially those at the graduate level, had implications for libraries. Prior to the expansion period university libraries, reflecting the limited curricula offerings of their parent institutions, were essentially undergraduate collections - with perhaps the exceptions of Toronto, Queen's and McGill. In the 1960's the rapid increase in student numbers and in teaching programmes found library collections wanting, both qualitatively and quantitatively. The weakness of Canadian book resources was well documented by a series of surveys in the five years after 1962.

The first of the surveys, made by Edwin C. Williams, was of humanities and social sciences collections in fourteen Canadian universities. Later George S. Bonn conducted a similar survey of collections to support scientific education. In 1964 Beatrice V. Simon's "Library Support of Medical Education and Research in Canada" was published. The most comprehensive of the studies was directed by Robert H. Downs. His report, published in 1967, was entitled "Resources of Canadian Academic and Research Libraries". These reports of inadequacies were seized upon by bibliophilic faculty members who argued for aggressive book acquisitions programmes.

In a brief to the Bladen Commission (Committee on the Financing of Higher Education) in 1964 the Canadian Association of College and University Libraries (CACUL) recommended that expenditure on the

library should be 10% of a university's annual budget. Only a few Canadian universities, most of them newer and smaller institutions, were able to attain this goal, and only for a relatively few years.

3. ADDING AND ASSESSING COLLECTIONS

In Ontario when universities were expanding rapidly it is not surprising that the first cooperative library project would be to provide five campuses with collections of basic books. The Ontario government made a grant of $1,300,000 for the Ontario New Universities Library Project. The University of Toronto Library offered to select, purchase and process identical collections to support undergraduate courses in the arts and sciences. These collections were for the newly established universities of Brock and Trent, two new colleges affiliated with the University of Toronto, namely, Scarborough and Erindale, and the University of Guelph which had hitherto been primarily an agricultural college. Begun in 1962 and completed in 1966/67 the project added 17,500 titles in approximately 35,000 volumes to each of the five recipient libraries.

A parenthetical note: at the present time Ontario colleges operate a scheme for bulk ordering and cataloguing of titles for their collections. Similarity in many of the course offerings makes bulk processing feasible.

In the spring of 1971 the Council of Ontario Universities (COU) asked the Ontario Council of University Libraries (OCUL) to give high

priority to an investigation of the possibility of centralized processing. A study made at that time by Hilda Gifford of Carleton University indicated that the overlapping in titles ordered and requiring original cataloguing was a smaller percentage than previously assumed. Presumably the final report to COU was negative for no more was heard of the idea of centralizing processing.

In 1968 the Advisory Joint Council (AJC) launched two studies to develop criteria by which the adequacy of collections could be assessed.

The first of these committees, set up in February under the chairmanship of W.B. Ready, was asked to report on standards for and adequacy of undergraduate collections. Ten months later the committee reported that various methods of assessing collections had been examined but the number of variables in library use made a numerical standard unacceptable. This committee was disbanded when it became apparent that to develop a satisfactory criteria would involve more effort than the results would justify.

In July 1968 another committee was established under the chairmanship of Robert H. Blackburn to prepare standards for the evaluation of collections to support graduate and research work, and further to implement these standards as they were developed. This committee was later known by the pungent acronym of GARLIC. In 1970 GARLIC in a progress report said that three methods of assessment were being examined. The committee had arrived at the conclusion that the quantitative approach as a means of judging a library collection had serious limitations. Presumably, like the committee which had been

charged with setting standards for undergraduate collections, the efforts of this committee came to naught.

4. SHARING LIBRARY RESOURCES

The dream of a library with collections adequate to answer every request from the university community may have been possible in earlier decades when change came slowly and usually less dramatically. Now, in the post-war period, knowledge grew exponentially, as witness the increase in book titles published and in the proliferation of scholarly journals. Interest in political and social developments world-wide expanded as speed of communication and travel converted our planet into the global village. Furthermore, the acceleration of scientific and technological change made it essential that scholars have early access, usually through specialized journals, to the latest information. Finally, the "publish or perish" syndrome made access to information held anywhere in any library vital. Generous financial support and an aggressive acquisitions programme would not assure that a library could fill every request made of it.

In 1965 the Committee of Presidents of Universities of Ontario (CPUO) established a subcommittee on the Coordination of Academic Library Services (COALS) and from this time library cooperation on a formal and provincial basis may be said to have begun. The new subcommittee was chaired by Professor C.F. Klinck. In December 1966 COALS made recommendations to CPUO on library service, recommendations which had been influenced by the recently released Spinks report.

This was prepared by the Commission to Study the Development of Graduate Programmes in Ontario Universities, chaired by Dr. J.W.T. Spinks. The report said that "it is impracticable, if not literally impossible, for the Province to satisfy the needs of fourteen - or even eight - multi-purpose universities for fully comprehensive research libraries".

Dr. Spinks made the following recommendations:

> that the now existing research libraries must be regarded as provincial resources with guaranteed access to scholars and graduate students of all universities.

In application this dictum meant the sharing of resources through an effective inter-library loan service and open access for graduate students and professors of any university to all collections.

The two key elements of a successful Inter-Library Loan (ILL) consortium are an easy method of ascertaining in which library a copy of a title is to be found, and then a quick delivery service. In Ontario, both aspects were early addressed. The first required a bibliographic centre or union catalogue, an issue which will be discussed more fully below; the second, an organization to move ILL books, was soon in place.

4.1 IUTS

The first cooperative project of the Ontario Council of University Libraries (OCUL), when it was organized in 1967, was the establishment of the Inter-University Transit System (IUTS). The librarian and library business manager of York University took the

initiative in working out the operational details. The Committee of Presidents quickly swung its support behind the project. IUTS was operated by OCUL until 1972 when the responsibility was assumed by the Council of Ontario Universities (COU).

A fleet of trucks is based on York University, conveniently located just off 401, the transversal highway running through much of the province. Only the libraries of two universities, Laurentian and Lakehead, because of their locations can not receive book deliveries by truck.

The Ontario transit service was linked later to one organized in the province of Quebec known by the acronym PEBUQUILL. This cooperative arrangement came about in consequence of an agreement between OCUL and La Conférence des recteurs et des principaux des universités du Québec (CREPUQ); Sous-comité des bibliothèques.

Ottawa, the national capital, is a city rich in book resources, having the National Library, the Canadian Institute for Scientific and Technological Information and some two score other government libraries. In 1977 IUTS was tied into the federal government libraries delivery system, giving acccess to these collections.

The IUTS from its inception has been an unqualified success. It has both widened the scholar's access to books in his discipline and speeded up delivery of ILL books. The newer universities, which initially had a great scarcity of library materials to support their course offerings, were naturally more dependent on ILL and IUTS than institutions with well-established libraries. The smaller universities

continue to derive the greater benefit; in the words of one librarian, "We could not survive without ILL".

The geographic isolation of Laurentian and Lakehead Universities makes it impossible for them to participate in IUTS. Books requested by these two libraries are first trucked to York University, then packaged and sent forward by other means, usually post. This scheme, as compared to direct mailing from the lending library, may cause a delay of some days in delivery.

An additional benefit of trucking books over mailing is that there is less wear on bindings than when packed and posted. Librarians are increasingly preservation conscious, as purchasing power declines and book prices soar. Replacement copies become more difficult to obtain as publishers are printing smaller editions and warehousing fewer copies.

4.2 ILL

Interlibrary lending is not a new idea, as Dr. Blackburn pointed out in his annual report of 1965/66.

> King Ptolemy is reputed to have sent a deputation to Eleazar the High Priest at Jerusalem, armed with rich gifts of jewels and gold and a letter asking for a rather special loan to his great library in Alexandria.

No doubt Ptolemy wished to borrow the scroll in order that his scribes could make a copy for his famous library, as the photocopy machine had yet to be invented. How opportune that this great facilitator of the transfer of excerpts from printed books and

periodicals should have been perfected in the early 1960's. What would expanding scholarship, with its insistence on access to information in scattered repositories, have done without this easy method of copying the printed page?

Traditionally on this continent ILL service was the privilege of professors and graduate students. In 1971 in Ontario an experiment opened the service to undergraduates attending three universities, Brock, Queen's and Western Ontario; in part the exercise was intended to determine the degree of adequacy of the collections in those universities. When the results showed that the traffic in undergraduate requests would not be burdensome, ILL service was opened to these students in all Ontario universities. The experiment was only one example of Ontario as an innovator in areas of library cooperation.

In addition to province-wide consortia for cooperative projects there are regional (sometimes quite informal) arrangements among some libraries. An example of this is the "no verification of ILL" by the requesting library, an agreement in operation among Guelph, Waterloo, Laurier, Brock and Windsor. Normally the sending library checks a patron's request for accuracy of citation, a time-consuming and expensive aspect of the ILL process. The agreement among the five libraries means that the receiving library will be tolerant of those few cases of inaccuracy which may cause staff unprofitable searching.

A study was undertaken in 1970/71 to analyse the characteristics of interlibrary borrowing. Each library maintained statistics for a year on the subjects, languages, publications, periods, etc., of materials requested. A major objective of this study

was to provide borrowing libraries with guidance in developing collection policies.

However, the study encountered a major problem in that there was a lack of consistency in maintaining ILL records within the institutions. The cost of instituting standardized data collection procedures, or of interpreting the many diverse forms of records available, was considered prohibitive on a continuing basis. The fact that the OCUL libraries had their own courier system, IUTS, made casual and diverse forms of record keeping possible. In any case the above study did not produce a meaningful report.

The University of Toronto Library, the largest research library in Canada, had for decades served (along with McGill University) as a primary source of ILL materials for the rest of the country. In 1975 the library found that it must institute a cost-recovery fee on each item borrowed.

> The unit cost of handling and filling requests and the steadily rising demand for interlibrary loans has placed a heavy burden on large libraries which were major supppliers of the service, and we had reached the point at which we could no longer bear the expense.

Two other university libraries, Guelph and McMaster, also introduced charges for ILL. However, in the spirit of their collections being a provincial resource, Toronto, Guelph and McMaster did not apply the charge to university libraries within the province.

4.3 IUBP

Liberalization of access and borrowing privileges was extended in 1974/75 by the Inter-University Borrowing Project (IUBP). An agreement was reached permitting faculty and graduate students to borrow directly and in person from any university library. A formula was arrived at, providing safeguards for the lending library, and providing for annual measurement of the traffic. Would-be users were given IUBP borrowing cards. The new privilege reduced frustration in visitors. The value of browsing in a subject collection as a stimulus to creative scholarship, compared with dependency on selection of titles from a bibliography or catalogue, can not be over-rated.

The IUBP policy undoubtedly is of most benefit to faculty and graduate students with other universities in close proximity, as Guelph-Waterloo - Wilfrid Laurier, and in the Toronto area, York - Toronto. Since all roads and air routes lead to Toronto, out-of-town visitors to the metropolis on other business can take advantage of access to Canada's largest research library.

The IUBP access was simplified and extended to a third class of users, the undergraduate students, by agreement between Waterloo and Wilfrid Laurier in 1972. No IUBP card was required, students using their own university library card. This arrangement was simpler than IUBP. What was initially a local mutual borrowing agreement was extended to include Guelph in 1980 and Western Ontario and York in 1981.

4.4 DIRECTORY

A further effort to facilitate access to libraries has been a directory supported by yearly supplements recording changes. The directory provides quick reference to key personnel with their telephone numbers, and the physical location, size and scope of collections on each campus. The availability of these particulars is useful to ILL librarians and IUBP users visiting other campuses. Originally an Office of Library Coordination publication, of late this has been compiled by McMaster.

4.5 CLEARINGHOUSE EXPERIMENT

An interesting experiment in resource sharing was conducted out of McMaster in 1969/70. This was a depository-exchange for duplicate volumes. About 200,000 volumes were said to have been deposited, then libraries selected titles of interest to them. Later the National Library organized a similar clearinghouse which is still in operation.

5. TOWARD A PROVINCIAL UNION CATALOGUE

In inter-library lending a frustrating aspect of the borrowing process is the trial-and-error method of locating a title wanted.

The National Library of Canada for two decades has maintained a National Union Catalogue in card form, and this any library can access for locations. The National Library then sends the ILL request to that

library holding the title which is located closest to the requesting library. The filing of new location entries and the maintenance of the massive card file has been difficult and expensive. The National Library, like many other large research libraries with their own catalogues, has the colossal task of converting the National Union Catalogue to machine-readable form.

In Ontario, in the early part of the past decade there was strong sentiment in some quarters for a provincial union catalogue, even though most Ontario university libraries were contributing their catalogue records of all new accessions to the National Union Catalogue. However, a provincial catalogue, and particularly if it were in machine-readable form, could be manipulated to provide various kinds of management data. One function would be to monitor acquisitions and holdings with a view to developing collection rationalization throughout the fifteen libraries. Thus was born the Ontario Universities' Bibliographic Centre Project.

A major function of a bibliographic centre would be to supply catalogue data and thus eliminate a great deal of the duplication of effort in cataloguing in Ontario libraries. The Board for Library Coordination (BLC) estimated the salary costs in 1974/75 of processing books in the fifteen libraries at $13,000,000, and thought that a bibliographic centre could reduce salary costs by 20% in those libraries cataloguing manually, and by 10% in those with partially automated systems (COU, "Review 1972-73 to 1974-75", p. 28). The COU received a development grant from the Ministry of Colleges and Universities in 1973 to establish a demonstration project. Six

libraries were initially involved - Toronto, Western Ontario, York, McMaster, Guelph, and Brock.

5.1 UNICAT

This consortium, named Union Catalogue but commonly known by its acronym UNICAT, became operational in the spring of 1974. The original members were later joined by other university libraries in the province, and by some public, government and special libaries. The Quebec library consortium which linked up with UNICAT was known as TELECAT. Access to TELECAT records aided the two bilingual Ontario university libraries greatly. Members of UNICAT/TELECAT inputted bibliographic data to a shared union file through the on-line Catalogue Support System (CATSS) operated by the University of Toronto Library Automation Systems. This latter utility was able to provide libraries with catalogue cards, COM-catalogues, and accession lists, from the data they had contributed to the central machine-readable union catalogue. The University of Guelph Library, until it withdrew from UNICAT, produced spine labels, book pockets, and punched circulation cards, on a minicomputer, and made these available to other libraries.

UNICAT was in operation from 1974 until 1980; the TELECAT consortium is still functioning in Quebec.

The University of Toronto Library Automation Systems, better known by the acronym UTLAS, grew out of the in-house automated system designed for the Toronto library. Chosen as the utility to support

UNICAT, it was mounted though it had not reached a maturity of design and development that would allow it to adequately service a consortium. In large-scale computerization too often the expectations of would-be utilizers outrun the methodical systems work in progress, and force premature installation.

The original file concept of the UNICAT consortium was to maintain the bibliographic data of the participating libraries on-line in a single union file. It was obviously modelled on the first of the bibliographic utilities, the Ohio College Library Centre (OCLC). The University of Toronto Library insisted that its data must be maintained as a separate entity but linked with the composite file. Later the other libraries found that they too needed their records in separate though linked files.

One incentive for a library to join UNICAT and thus have access to UTLAS was that it could obtain a record of its holdings in machine-readable form. This was particularly attractive to libraries on campuses where automation was in the early stages of development or where the local computing unit did not have the personnel to help the library to automate. One library, Trent, has not been able to participate since the university does not have a computer.

A second incentive for joining UNICAT was the prospect of lower cataloguing costs, but this was illusory. The UTLAS charges increased throughout the period, and libraries with computer facilities found that local cataloguing was cheaper. A contributing factor to dissatisfaction with the utility was the unresponsiveness of the UTLAS management to suggestions or requests. Guelph and Western Ontario

withdrew early from the UNICAT consortium, and York a couple of months before its final collapse. After six years of operation UNICAT was disbanded in June 1980.

At what price provincial bibliographic cooperation? One Ontario library made the following comment:

> The UNICAT project has certainly demonstrated that certain aspects of cooperation, while beneficial to participants, can result in operations which are time consuming, costly and of questionable value, e.g., the shared editing responsibility in maintaining union file standards.

Since the dissolution of UNICAT most or all of the members have continued to use UTLAS to obtain catalogue data and maintain their machine-readable files; the difference is that the bibliographic files are now the property of the individual libraries rather than being the property of the consortium.

Advances in computer technology, particularly the development of minicomputers, offer the possiblity of library computer networks by which bibliographic data and location information can be queried and answers transmitted, rather than maintaining the information in one massive provincial, regional or national union file.

The Ontario Universities' Bibliographic Centre Project did not achieve its original objective of a central union catalogue containing the records of all fifteen OCUL libraries. Since no more than seven university libraries were members of UNICAT the central file had limitations as a location record of materials, and never became the collections management tool originally intended.

However, the massive number of titles in the linked files of UTLAS has made that utility a valuable source of catalogue data for

those libraries using its service. The importance of its files has increased as UTLAS has recruited an increasing number of libraries from sea to sea.

Ontario university libraries have available to them another Canadian source of catalogue data in machine-readable format, the records held by the National Library. These records are of the Library of Congress, British Library, Bibliothèque Nationale, and Canadian MARC. Studies made during the UNICAT project revealed that the preponderance of records wanted were LC MARC. Libraries can obtain catalogue data from the National Library at a lower cost than from UTLAS, and reducing the cost factor of labour-intensive cataloguing is a major incentive for obtaining data from a source outside the individual library. This does not avoid, however, the cost of developing a system to process the machine-readable catalogue data locally if the advantages of computer processing are to be realized.

6. THE UTLAS BIBLIOGRAPHIC UTILITY

Of the four major bibliographic utilities established in Canada and the United States, each has unique features and operating philosophies which have, in large part, determined the nature of its services and products. The Washington Library Network (WLN) was designed as a statewide facility primarily for interlibrary loan service. The Research Libraries Information Network (RLIN) was designed as a source of full and complete bibliographic records accessible by all traditional library catalogue access points. The

Ohio College Library Centre (OCLC) was designed to produce cards for library catalogues at a unit cost less than competing manual methods and, at the same time, record locations of institutions acquiring an item. The University of Toronto Library Automated Systems was implemented as a service bureau, providing access to full bibliographic records but also providing computing and editing services at cost to libraries unable to justify the expense of developing their own computer based systems. Consequently UTLAS, with its emphasis on the customer library's ownership and control of its own data, cannot be considered a cooperative project.

Operated, designed and controlled by computer specialists rather than librarians (the first professional full-time librarian was not employed by UTLAS until 1974) the initial pattern emerged as the most equitable costing scheme of the four bibliographic utilities; essentially the customer pays only for computing resources used. But it was also a costing scheme for which budgeting for future use, based on past workload history, was impossible to accomplish. This problem has not changed since 1967 and was exacerbated by the pricing year starting in July, which invariably caused library expenditures for UTLAS services to exceed budgeted values.

The cost of the UTLAS catalogue service is a major complaint of libraries, while the accounting services still do not enable a library to match its known usage to charges invoiced. Because of this, combined with a lack of responsiveness to library needs, failure to recognize customer concerns in long and short-term planning, marketing emphasis on attracting new customers and failure to provide adequate

quality control and services to the existing customer base, UTLAS services and policies rapidly became a source of concern.

7. UNION LISTS

The OCUL libraries found it less difficult to prepare union lists of materials in non-book form than a union catalogue of their book collections, perhaps because the non-book collections were less massive. Of the union lists developed by OCUL the two most significant are best known under their acronyms, CODOC for government publications and CUSS for serials.

7.1 GOVERNMENT PUBLICATIONS (CODOC)

Librarians have never quite known how to maintain bibliographic control of government publications. In 1967 the University of Guelph Library developed an imaginative scheme for the coding and batch computer listing of government documents to provide in-depth access to them.

Initially called the Guelph Document System, when extended to other libraries it became Cooperative Documents, and hence CODOC. It officially became CODOC in 1974. Three years earlier Guelph and Western Ontario merged their document files to create the first OCUL union list. At present CODOC contains the holdings of a dozen Ontario university libraries.

The computer record formats are "quick and dirty" listings, but the fiche files are not. Of the CODOC products the most notable is the KWOC index which provides in-depth subject access. The advantage of CODOC is that it is infinitely less expensive than proper cataloguing, which is often not justified for topical or statistical pamphlets which are periodically superseded by new, more up-to-date, issues.

Member libraries in CODOC take priority responsibility for coding current publications of various jurisdictions or of departments of provincial and federal governments. Local machine-readable bibliographic files are created according to common coding instructions and computer programmes. Each library produces its own internal COM-fiche catalogues, monthly, and contributes a tape copy to the union system. These files are merged bimonthly for a union supplement, with a total union file and COM-fiche catalogues produced semi-annually. In addition, on-line access to the CODOC file is provided through CISTI, which mounts the CODOC union data base on its retrieval system, CAN/OLE.

Of added benefit to new libraries joining the CODOC project is the capability of extracting records for local coding purposes from the master union file.

7.2 SERIALS (CUSS)

One of the more successful and useful OCUL projects has been the Cooperative Union Serials System (CUSS). This is a list of serials

(with holdings) in university libraries, and includes those of some public libraries. In 1972 ten libraries agreed on a pilot project, the first merging being the files of York and McMaster. The following year the first union list was produced containing the serials holdings of six universities.

The list is prepared annually through a computer merging of records, and is distributed as COM-microfiche.

From the method of preparation it can be seen that a prerequisite for a library's participation is a machine-readable serials record. Though CUSS was initiated in 1972 the universities of Carleton and Ottawa could not join until 1979 and 1980 respectively, the dates when their records became available in machine-readable form. Laurentian has only 10% of its serials on magnetic tape. Trent hopes to have its serials records in machine form in 1982, and will then be able to join the CUSS project. This consortium demonstrates that Ontario libraries, being at different stages of development, particularly in library automation, are not in a position to cooperate equally in all projects.

The relation of the University of Toronto Library to the project exemplifies the problem of including the holdings of the mega-library. Toronto has by far the largest number of currently published serials titles, and also an impressive collection of older periodicals. The cost of putting its total holdings in the CUSS format is too great, and scarcely justified since the titles are in the National Union Catalogue. (This is not to imply that Toronto is the only OCUL library with serials records in NUC). Toronto participated

in the 4th edition of the CUSS catalogue by including its medical and science periodicals, which are in the CUSS format. To compensate for not having all its serials in the CUSS list the Toronto library provides each OCUL member with a free copy of its COM-serials catalogue.

The importance of a provincial serials list as a location guide is that approximately two-thirds of the traffic in interlibrary lending is requests for photostats of articles appearing in periodicals. A subsidiary use for the CUSS list is in the selection and cancellation of serials titles. In recent years the escalation of subscription prices has forced each library to be most selective in adding new serials titles, and often to cancel subscriptions; the CUSS list has assisted librarians in making the difficult decision to cancel or retain by indicating in what other library, or libraries, a title is held.

A more localized cooperative programme in communicating information on serials has developed in the Laurier-Waterloo-Guelph triangle of libraries. QUATLL, a subset of the CUSS list for the three libraries and McMaster, shows more readily the journals available in the immediate region. TUG is an accession list of new serials to which the tri universities are subscribing, the purpose being to avoid duplication. The three libraries also notify each other when subscriptions are cancelled.

The CUSS project is an example of how through cooperation the sharing of resources can be facilitated. A somewhat comparable but specialized list is the "Union List of Scientific Serials in Canadian

Libraries" published by the Canadian Institute of Scientific and Technological Information (CISTI). The volume contains the holdings of scientific journals of the Ontario universities except Trent and Wilfrid Laurier which would not have large holdings.

In time a North American serials base may be available through a project called CONSER (Consolidation of Serials Data Bases). Some OCUL libraries have been involved in this project. In the early stages of the designing of the data base Richard Anabel of York made an important contribution.

7.3 MICROFORMS

An early compilation was a union list of microform sets. With the expansion of graduate studies and research in the social sciences and humanities, publishers of micromaterials responded to the demand for research materials by filming any topical archival series for which there was a market. Most of the materials appearing in microform were of such limited use potential as to make reprinting in book or document form economically unfeasible. What a boon microforms have been to the scholar! Where once he would have had to visit one or more distant repositories he could now conduct much of his research in front of a microreader in his own library.

Unfortunately, microforms are generally not as well indexed in library catalogues as are books. Indeed at the present time the Washington-based Association of Research Libraries, to which six Ontario

university libraries belong, has as one of its objectives better bibliographic control of microforms.

A union list of microform sets was first considered by OCUL in 1970, and the compilation completed the following year. A second greatly expanded edition of the union list, which included the holdings of libraries in the province of Quebec, was issued in 1979. Both were editions prepared by the University of Toronto Library.

Negotiations are currently underway with the National Library of Canada to take responsibility for maintaining the list and expanding it into a national union list of microform sets.

The OCUL project is an excellent example of cooperation in the sharing of research resources. Further, microforms lend themselves to be easily transported from one library to another, and to extended loan since the use of any particular topic or series is likely to be by a limited number of scholars.

7.4 MAPS

Maps are seldom included in a library catalogue and thus the holdings of any given library often are difficult to determine. In 1974 the OCUL librarians agreed to bring maps under a degree of bibliographic control by the preparation of a union list of topographical map series, and another one of atlases. The availability of these lists has made possible the coordination of collection policies as an approach to collection rationalization, and also a programme for the exchange of duplicates.

The provincial ILL agreement was extended to maps. The IUTS trucking service makes possible the transportation of bulky map sets from one library to another.

8. COOPERATIVE CATALOGUING

Librarians have long recognized the advantage of sharing cataloguing data since this would substantially reduce labour costs. Descriptive cataloguing and classification are highly labour intensive, indeed the most expensive of library tasks.

A major breakthrough for the individual library was the publication in book form of the catalogue of the Library of Congress (LC) in the late 1940's. This library was the leader in establishing standards, so that the individual cataloguer in his library had to do little more than copy the information, if he could find the title for which he was looking. The Library of Congress published supplements, but a cataloguer might have to wait months or even years before LC catalogued a particular title.

Then came automation and machine-readable records and the possiblity of accessing on-line the pooled cataloguing data of a consortium of libraries. The two major utilities on this continent offering access to the shared records of many libraries are centred on Ohio and Ontario, OCLC and UTLAS. The last was discussed above but primarily as a union catalogue rather than as a source of data.

The leadership shown by Ontario libraries in library automation is worthy of recognition.

The University of Toronto Library was one of the first on the continent to have machine-readable records, and the first major library to be able through these records to close the card catalogue. A COM-microfiche catalogue was substituted for the card catalogue. In 1966 this library was invited by the Library of Congress to participate along with fourteen American libraries in a pilot project known as MARC (Machine-Readable Catalogue). At the time, the librarian wrote:

> In all these developments our first care is to use a format which will be compatible eventually in a regional or international bibliographic network, and we must be prepared to spend time and money on experimentation before realizing any significant benefits.

The University of Guelph Library has always been in the forefront in experimentation with library automation. Indeed, it had its complete catalogue in machine-readable form by 1968, and began using COM-catalogues in 1973, thus pre-dating Toronto. In 1971, Guelph and Western Ontario engaged in experimentation in the cooperative use of Marc tapes provided by LC. Experiments in automation conducted at Guelph have facilitated the development of computerization in other OCUL libraries.

8.1 SHARED CATALOGUING

In the late 1960's the three university libraries in British Columbia (TRIUL) experimented with shared cataloguing, a scheme under

which a library took responsibility for cataloguing books in certain fields of knowledge assigned to it. Each library sent a copy of the master catalogue card to the other participating libraries, which could use the data should they happen to acquire a title catalogued within the group. In 1973, three Ontario university libraries - Windsor, Waterloo, and York - joined the consortium.

York University Library took the initiative in organizing a similar shared cataloguing programme among universities having law collections. As the range of subject matter was more restricted, this consortium was probably more effective in the sharing of catalogue data than the more general one.

Later, with so many libraries contributing their catalogue data to the UTLAS on-line catalogue, these earlier sharing arrangements fell into abeyance.

9. COOPERATION AMONG ADMINISTRATORS

An important contribution to effective library service in the province has been the exchange and sharing, both formal and informal, of ideas and expertise among library administrators. Regular meetings of OCUL librarians provide a forum. Since the mid-Sixties the administrators have been gathering and exchanging statistical information on topics such as budgets, acquisitions, salaries, and staffing. This information is useful in budget preparation and decision-making in general.

Competition rather than cooperation is the norm to be expected of library administrators, for each has the dream of creating the strongest collection that his institution can justify. In this the librarians but reflect the strong competitiveness that exists among universities which compete for funds, for staff, and for students. What is surprising in Ontario is that library administrators cooperated so well.

10. COOPERATION IN OTHER AREAS OF CANADA

Associations of university library administrators exist in other parts of Canada. Like OCUL their aim is to encourage regional cooperation. The following is an outline of their cooperative efforts.

10.1 TRIUL

In British Columbia the association of three university libraries is known as Tri University Libraries (TRIUL). Two of the libraries are in the one metropolitan area, the other about seventy miles distant across the Straits of Georgia. As a former Librarian to the University of Manitoba once said, "In British Columbia all that the libraries require to cooperate is an urban bus ticket and a row boat".

In an earlier period the libraries worked toward standardization and rationalization. Thus, on occasion the heads of like divisions in the three libraries met to discuss problems in their areas

of endeavour. In particular, they examined collection rationalization as it applied to journal subscriptions.

In 1977 the three university libraries joined with three colleges to implement a common on-line catalogue support service. They subcribed to UTLAS to obtain catalogue data and union catalogue production support. COM-microfiche of their union catalogue is available to other libraries in the province.

In recent years the British Columbia Union Catalogue (BCUC) Project has been giving consideration to the replication of a bibliographic computer software package in the province. It may be noted that this proposal is similar to the earlier concept in Ontario - a provincial bibliographic centre. Funds have been sought from the provincial government, but without success at the time of writing.

10.2 ALBERTA STANDING COMMITTEE ON LIBRARY MATTERS

In Alberta the four university librarians form the Standing Committee on Library Matters which reports to the Alberta Universities' Coordinating Council.

In 1979 the provincial government made a three-year grant to university and college libraries to be used for the purchase of library materials. The Standing Committee allocated money from these grants to support a more efficient and faster interlibrary loan service among the four institutions. This money has been used to hire some additional staff and to pay some incidental expenses. The books are carried between Edmonton, Calgary, and Lethbridge free of charge by the

Provincial Government Courier Service. The project is called the Alberta Universities Interlibrary Loan Service (AUILS).

10.3 COPUL

The Council of Prairie University Libraries consists of the nine university librarians in the three provinces. The Council meets twice a year to discuss issues of mutual concern.

At an earlier period the group drafted a policy whereby a library making an expensive purchase would circulate the others to enquire whether the material was already available or if purchase were contemplated. Because of the vast distances between institutions this policy was not adhered to for long.

The group has implemented one successful cooperative project. The University of Saskatchewan Library prepared a computerized statistical package to monitor its own interlibrary loans. At a meeting of the interlibrary loan librarians of COPUL it was agreed that the other libraries might participate. Each library would code its own data and send it to the University of Saskatchewan. Then this library twice a year would send the other libraries computerized lists of all transactions between COPUL libraries. The costs are then reconciled and libraries pay accordingly.

10.4 CREPUQ; sous-comité des bibliothèques

The sous-comité des bibliothèques of La conférence des recteurs et des principaux des universités du Québec (CREPUQ) held its hundredth meeting in December 1981. The chief librarians hold four or five meetings per year in which there is a free exchange of information on the operation of their respective libraries. An early cooperative project was the organization of a delivery service by truck among the members; this is linked up with the Ontario IUTS. Considerable effort has been devoted to developing a statistical format for reporting which would be aceptable to the Quebec government for its various purposes. The CREPUQ sub-committee on libraries and OCUL have on occasion met jointly, and follow each other's programmes with interest. As indicated elsewhere the Quebec libraries were the TELECAT component of the UNICAT-TELECAT network.

10.5 ASSOCIATION OF ATLANTIC UNIVERSITIES

The Association of Atlantic Universities in 1977 adopted a common automated system to produce catalogue cards and maintain a union catalogue. This was the Blackwell/North American Cataloguing System, a batch-mode process, which was mounted at the University of New Brunswick. This system has collapsed, and some former participants now buy service from UTLAS. The Atlantic libraries, other than in the city of Halifax, have not had much success with cooperative schemes.

11. A TABULATION OF STUDIES AND PROJECTS IN ONTARIO RELATIVE TO UNIVERSITY LIBRARIES

APPROXIMATE DATES	AGENCY, STUDY OR PROJECT	PURPOSE
1964	Bladen Commission	submission on funding of university libraries in Canada was prepared by Ontario librarians
1962-67	Ontario New Universities Library Project	to supply collections of basic books to five college and university libraries
1967	COALS & Advisory Committee on Grad. Studies	endorsed Spinks recommendation that all university library resources be considered a provincial resource
1968	COU & CUA	a joint meeting established guide lines for an Ontario university library system
1968-70	Advisory Joint Committee	supported two studies to establish criteria for judging adequacy of library collections (1) undergraduate collections (2) collections to support graduate programmes and research
1968	OCUL	developed provincial ILL service
1968	OCUL	organized Inter-University Transit System
1968	Advisory Joint Committee	hired consultant to develop plans for a proposed provincial bibliographic centre
1968	OCUL	undertook assessment of library facilities (space) likely needed in 1976
1969	OCUL	recommended a research and planning office to plan the proposed biblio centre
1969	Advisory Joint Committee	inauguration of Ontario University Biblio. Centre Project (OUBCP) with appointment of planning officer in October
1969-70	OCUL	depository and clearinghouse of duplicates operated out of McMaster
1970	OUBCP	preliminary investigation of feasibility of provincial union catalogue, sought standardization of bibliographic records, and study to analyze characteristics of ILL lending

APPROXIMATE DATES	AGENCY, STUDY OR PROJECT	PURPOSE
1970	OCUL	extended ILL borrowing to undergraduates in three test universities - later extended to other universities
1970	OCUL	established Standing Committee on Co-operation in Acquisitions to avoid unintentional and unnecessary duplication
1970	COU	expressed support of rapid development of a machine-readable national catalogue
1971	COU	established Office of Library Coordination (OLC) as successor to OUBCP
1971	OLC	worked with Guelph and Western on project re MARC tapes
1971	COU	asked OLC to give priority to feasibility of central technical processing
1971	OLC	liason with Office of Computer Coordination re interuniversity computer communications network
1971	OLC	examined feasibility of a commercial firm supplying some areas of library acquisitions fully catalogued
1971	COU	in October appointed Board of Library Coordination
1972	BLC	established Committee on Research Collections to make recommendations on collection policies, depository libraries for little-used materials, a union catalogue, liason with National Library
1972	CUSS	ten libraries agreed to merging machine-readable serials files from York and McMaster
1973	BLC	in May presented to COU A Proposal for the Establishment of a Cooperative Library System for the Ontario Universities
1973	OULCS	Ontario Universities' Library Cooperative System used to describe library scene

APPROXIMATE DATES	AGENCY, STUDY OR PROJECT	PURPOSE
1973	BLC	appointed Committee on Collection Policy composed of an academic and the librarian from each university, but committee inactive
1973	CODOC	in 1967 developed as Guelph Documents System, now a full cooperative
1973	Maps	beginning of union list of maps project
1973/74	OLC	now the office in charge of all OULCS cooperative projects, full-time staff from July, 1974
1974	UNICAT/TELECAT	on April 1 operated as Monograph Demonstration Project subsidized by Ministry of Colleges and Universities
1974	BLC	circulated draft document on Interuniversity Borrowing Project
1977	MEDICAT	a similar scheme to UNICAT but for cataloguing medical materials for the five medical school libraries and other research collections
1978	OCUL	study of possible system of subject specialization by library, building on existing collection strengths
1978	OCUL	recommended that in the interests of economy the management of cooperative projects be transferred from OLC to individual libraries, which left OLC with only the management of UNICAT/TELECAT
1979	UNICAT/TELECAT	the management board recommended that the consortium be dissolved
1980		UNICAT/TELECAT ceased operation on June 30
1980		OLC closed on October 15
		. . . . .
	Postscript	The coooperative ventures which were known as the Ontario Universities' Library Cooperative System (1973-78) continue to function as successfully as formerly but with members of OCUL agreeing which director should be responsible for which project. Several local or regional cooperative agreements also continue to operate effectively.

12. AN EVALUATION OF LIBRARY COOPERATION IN ONTARIO

Among libraries the motives for cooperation are better service to library users, and economies in the provision of the service. Ontario libraries accepted the principle that their collections were a provincial resource to be shared by all universities. Since 1973 the several cooperative library systems, described earlier in this report, have been known as the Ontario Universities' Library Cooperative Systems (OULCS). In the decade of the 1970's in no other province or American state have librarians so actively facilitated resource sharing.

Interlibrary lending is commonplace among academic libraries, but in Ontario the utilization of the service has been encouraged by a regular and rapid transit system. The province is fortunate in its geography, since most of the libraries are on, or within a reasonable distance of, the axial highway 401, while the library with the largest book collection is roughly near the mid-point. In no other political entity have universities in such a large geographic area been so well served by a book delivery system.

Though interlibrary lending is commonplace, what is unusual here is the liberality of personal borrowing through the IUBP scheme and through local and regional reciprocal agreements allowing direct borrowing.

In the Seventies much of the cooperative effort among libraries was directed to making known the extent of Ontario library resources through the preparation of union catalogues. Fortunately the introduction of computers made compilation easier. Success was

achieved in establishing the bounds of non-monographic book resources - documents, serials, and microform and map series. The union list of serials (CUSS) was particularly important in resource sharing, since such a high percentage of ILL traffic is in articles in periodicals. The contents of microforms are almost exclusively research materials, so the location of microform series is important to graduate students in the humanities and social sciences.

The libraries failed to create a provincial union catalogue in machine-readable form of their book holdings. Failure can be ascribed to a number of factors.

As a generalization it might be said that laymen (in which term many librarians are to be included) in the early years of computers were dazzled by their potential, and impatient to have computer systems operational. Software packages on occasion were mounted before they had been fully developed and tested, thus sowing the seeds of future problems.

The creation of UTLAS was an illustration of a common systems design problem, namely that a system will invariably be used for purposes for which the system was never designed. Hardware and software designed and developed for a single institution, the University of Toronto Library, were expected to meet the requirements of all academic libraries in the province, in addition to that of the University of Toronto. The result was delay, expense, and for librarians, frustration. As late as 1977, computer programmes written originally in 1967 and modified over the years were still in use within UTLAS.

UNICAT attempted to provide the functions of data entry and cataloguing support most in demand at the time of its inception. At no time did the consortium include more than half the fifteen OCUL libraries as participants. Initially some libraries did not join because they had efficient catalogue systems. Other libraries were unable to join because of lack of computer power or low priority of systems development on their respective campuses. Still other libraries decided against participation when the UTLAS utility instituted price increases and experienced technical problems. Three early members had withdrawn from the UNICAT consortium before it folded in 1980.

The OCUL libraries presently using UTLAS as a supplier of catalogue data are Toronto, McMaster, Brock, Lakehead, Laurentian, and Ottawa.

The failure to create an Ontario union catalogue should not be viewed as an unmitigated disaster. The regional bibliographic centre concept, popular forty years ago, has lost much of its appeal as those centres in existence struggle with soaring operational costs. More important, the voracious demands of modern scholarship for printed information transcend regional boundaries. If there was viability to the original concept of a provincial catalogue it was because of the bibliographical richness of Ontario. With the National Union Catalogue maintained within the province, a second master file would have seemed redundant had the plan not been to use the provincial catalogue for the management of bibliographic resources.

When the UNICAT consortium was dissolved in the spring of 1980 the membership agreed that their pooled records should be deposited in the National Library in Ottawa. Two years later these Ontario records have not been transferred. OUCL and the BLC of COU should insist that UTLAS transfer these machine-readable records at the earliest possible date.

Technological developments in the near future should make a mammoth expensive-to-maintain union catalogue unnecessary for locating titles. When protocols for computers to access one another have been developed, it will be possible for locally mounted bibliographic records to be accessed by other computers. At present the National Library and several Ontario university libraries are working on such a protocol.

Local access by computer terminals to locate titles is in experimental stages at the universities of Guelph, Waterloo, and Queen's; the use is still experimental because of the queuing problems of communication access by large numbers of users for the purpose of searching library files. Unfortunately the logical level of search access under development for direct patron use is different at each institution, and unless cooperative effort is expended to coordinate and develop a common search "language", the prospect of a confusing multiplicity of search commands unique to each institution is a real one, analogous to the Tower of Babel. It does not appear unreasonable for a library user to expect one set of search commands to be applicable in all Ontario university libraries from his local terminal, even if this is accomplished by a transparent conversion process.

In collection rationalization the libraries have had but limited success. One of the first assignments of the Office of Library Coordination in 1973 was to encourage libraries to develop and file their collection policies relative to the three levels of collecting - for undergraduate, masters and Ph.D. studies. Two years later the OCUL Standing Committee on Cooperation in Acquisitions recommended that OLC establish a routine whereby unintentional and unnecessary duplication could be avoided. Libraries dabbled in rationalization of purchases for items worth over $2,000, and circulated notices of intent to order. But the scheme broke down in response time and because librarians persisted in buying what was needed locally, even though it was being bought elsewhere in the province. With respect to rationalization applied to periodical subscriptions, one respondent wrote as follows:

> Members (of OCUL) have also circulated lists of journal cancellations, as a gesture towards rationalization, but none of us will commit money to maintaining a low priority subscription just because it is unique in the province or in the country - local needs and budgets have to come first.

The Standing Committee on Cooperation in Acquisitions in 1973 also recommended an agreement whereby important and needed acquisitions too costly for purchase by a single library might be secured for the provincial library system. It was in the spirit of this policy that other libraries agreed not to bid against McMaster for the extensive archive of Lord Bertrand Russell, English mathematician and philosopher. In 1981 three university libraries, York, McMaster, and Guelph combined to purchase an expensive elephant folio of Leonardo da Vinci's drawings; the volumes are to be housed in each library on a rotational basis.

Perhaps librarians can not be expected to enthusiastically adhere to policies intended to rationalize collections. Greatness in librarians has been marked by a highly developed acquisitiveness; it is this quality in director-collectors which has preserved man's cultural heritage in the world's important libraries and art museums. Moreover, a librarian's first duty is to the needs of the library's constituents at the local university; the librarian is accountable to his administration, not to a loose consortium of libraries.

In 1966 Dr. J.W.T. Spinks in his examination of graduate studies in Ontario made two statements respecting libraries. One - that research libraries should be considered provincial resources - is well remembered, but his second dictum tended to be disregarded during the remainder of the affluent Sixties:

> With regard to graduate and research collections it is clear that the Province must find ways of controlling the development and distribution of graduate programmes in the various universities.

Librarians have always maintained that rationalization of graduate studies must precede that of library collections.

New graduate programmes proposed by any institution now come under the review of the Ontario Council on Graduate Studies before provincial approval can be given. How successful this body is in resisting duplication of programmes when rationalized on the basis of local and immediate needs is not known. However, the reviews do not address duplication among existing programmes, or extensions of them. Every duplication of a teaching programme necessitates duplication of a book and journal collection. This is occurring when the total real

purchasing power of Ontario university libraries between 1972-73 and 1980-81 dropped from $12,678,000 to approximately $8,242,000: (Ontario Council on University Affairs, "A financial analysis of the Ontario university system - 1981". Table 10)

The individual library has an incentive to support cooperative ventures only as long as these enable it to offer a more effective service, or demonstrate a saving in costs. Regional - as contrasted with overall provincial - arrangements are successful since the participants can observe the actual sharing of resources. In a province-wide project, where the direct benefit to a library may be less tangible, in a period of budget constraint the librarian is likely to critically examine benefit versus cost. In a time of economic austerity, the release of personnel to concentrate on and participate in cooperative projects is in direct competition with demands for personnel to maintain local services. In the near future, to forestall withdrawals it may be necessary to provide libraries with incentive funding for some projects.

The closure of the Office of Library Coordination would seem to demonstrate that cooperation among libraries does not always require a centralized bureaucratic structure to operate successfully. The responsibility for various projects once managed by the Office has been taken on by library administrators on a voluntary basis. This would suggest that cooperation is alive and well in Ontario.

However, in all cooperative ventures there is a need for a more formal plan of evaluation, and for guaranteeing continued evaluation. In new cooperative projects the two prerequisites are as follows.

First, the objectives and a time line should be set out so that the project can be monitored and on completion of the project a proper evaluation made. The second prerequisite is that the benefits to be obtained relative to cost and effort be clearly articulated.

In the early 1970's some libraries seconded staff to work on the development of cooperative projects. Should the seconding of persons occur in the future, as is likely on occasion now that the Office of Library Coordination has been closed, there must be proper acknowledgement of the contribution of such people. Personnel performance evaluation for merit and promotion should include contributions to cooperative projects as a standard component.

The perception by the university librarians of Ontario with respect to cooperation is that they have been in the vanguard, indeed have pioneered for North America, in several cooperative ventures. Their chief goals and major successes have been in resource sharing and improved acccess. They have taken cognizance of the rapidly changing technology in file control and communications, and have experimented with computers and implemented automated systems. In addition to cooperative schemes which became operational, the librarians have examined other possible areas of cooperation and rejected those they considered not feasible or not cost effective. They are of the opinion that of all the groups within the university structure in the province, no other, with the possible exception of the Ontario Council on Graduate Studies, has worked as diligently at cooperation and with such a degree of success.

The orientation of university administrators, the professoriate, and the librarians is such that cooperation, and experimentation with the evolving new technology, will continue unabated.

13. ISSUES WHICH NEED TO BE ADDRESSED

The following issues which have long-term implications need to be addressed by the agencies involved in coordinating university library service in the province:

1. Review of the 1968 guidelines for relevancy.
2. Assessment of the degree of adequacy of funding for materials acquisitions in an inflationary period.
3. Relationship of the Ontario university library system to the evolving National Library system.
4. Effect of rapid technological changes in libraries.
5. Long-term space and storage planning.
6. Clarification of the relationship between BLC, OCUL, and COU.

13.1 REVIEW OF 1968 GUIDELINES

Are the guidelines for cooperation among university libraries as set out in 1968 at a joint meeting of the Committee of Presidents and the Committee on University Affairs still relevant? The three guidelines were as follows:

(i) that each university library would be essentially self-sufficient in the provision of library services for undergraduate use.

(ii) that the university libraries would be effectively interdependent in the provision of service for research and graduate use.

(iii) that there would be appropriate coordination and centralization of technical processes, automation being introduced when appropriate.

The first two guidelines remain valid. Undergraduate students do not require as many book resources, and the individual institution should be expected to make provision for the needs of these students. In graduate work and research on the other hand, demands for information range so widely, and often with such intense specificity in topic, that no library can have available all the resources which may be requested; consequently libraries must call on each other's resources.

The third guideline relating to technical services has been overtaken by events, and no longer properly fits the situation in Ontario. As described in preceeding sections of this report, there has been coordination in the area of bibliographic control of specialized materials, and cooperation in the exchange of cataloguing data, but centralization of technical processes is no longer regarded as feasible or desirable. Automated procedures, of course, have been widely adopted by individual libraries.

Revised and expanded guidelines for Ontario university libraries in the 1980's might read as follows:

(i) (1968 statement retained)

(ii) (1968 statement retained)

(iii) that the libraries continue to cooperate on projects which have demonstrated their usefulness.

(iv) that the libraries work toward a computerized open network for the exchange of bibliographic data and location information.

(v) that the libraries maintain a watching brief on technological experimentation and development at the National Library and elsewhere for possible application to Ontario libraries.

13.2 ASSESSMENT OF FUNDING FOR MATERIALS ACQUISITIONS

Like university libraries everywhere, those in Ontario have experienced erosion in the purchasing power required to maintain book and periodical collections. The damage has been offset somewhat by the sharing of collections through the various cooperative schemes; but there is a limit to how far the shared resources can be stretched. Further, adequate funding is a necessity if library collections are to provide currency of information in a rapidly changing world. How unfortunate if the situation were allowed to deteriorate to the level where resource surveys such as those of Williams, Bonn, and Downs, in the Sixties were needed to say that our collections can not properly support the teaching and research programmes of universities.

The adequacy of the funding level for library materials is a matter in need of monitoring in an inflationary period. If funding is

indeed insufficient, then OCUL, in collaboration with the BLC, should be studying the dimensions of the problem with a view to first publicizing the need, and then campaigning for additional funds. As a minimum every library should receive annually an addition to its materials budget equal to the inflationary factor. Since Dr. Spinks' recommendation that "the now existing research libraries be regarded as provincial resources" seemed at the time to gain acceptance, the argument might be advanced that the libraries should receive special funding from the province. Only the agencies concerned with the welfare of university research libraries can determine whether the approach for better funding should be institutional or provincial. OCUL is best able to supply and coordinate data, BLC to develop a programme for obtaining acceptance of a strategic plan for long-term funding.

13.3 NATIONAL LIBRARY EXPERIMENTATION OF SIGNIFICANCE TO OCUL

In the planning of library coordination in Ontario the imaginative leadership in technological developments currently being given by the National Library must be taken into consideration. Indeed, of five libraries collaborating with the National Library in the iNET Gateway test project three are OCUL libraries.

In the National Library, the Office for Network Development, placed on a permanent basis in April 1981, is charged with the planning and coordinating of nationwide decentralized bibliographic networks development. Firstly, the Office is prepared to serve in an advisory capacity in any national structures for network development, and

secondly it acts as a project manager for research and development projects to test new telecommunications technology for bibliographic data interchange. One research group currently at work is the Task Group on Computer Communications Protocols for Bibliographic Data Interchange; it is developing standardized procedures which will facilitate data interchange for specific bibliographic applications among library systems using diverse computer software and computer equipment.

In 1979 a significant report was issued by the National Librarian entitled "The Future of the National Library". The report contained eleven recommendations. The following if fully implemented could have an impact on OCUL libraries: creation of a decentralized bibliographic network; a resource sharing programme which would provide federal funds for collections of national significance; a national lending collection of periodicals and government publications; and a national preservation programme.

To recapitulate, the OCUL libraries should watch closely technological experiments being conducted by the National Library - particularly those which will facilitate the interchange of bibliographic data through computer linkage - for possible application in Ontario.

13.4 EFFECT OF RAPID TECHNOLOGICAL CHANGES IN LIBRARIES

The effect of rapid technological changes is addressed in the section "The Impact of the New Technology." Suffice it to list here

some of the key points to be considered and resolved by Ontario libraries.

From library to library the use of the new computer technology varies in quality and effectiveness. Part of the problem is a lack of personnel wi*h training in both computer science and library science. Incentives are needed to encourage staff to take the training which will enable them to blend the two fields. The alternative to developing in-house specialists which has been taken by some libraries has been to adopt vendor supplied systems, not always with the happiest of results.

Fully on-line computer based library data processing systems are likely to become a necessity in the near future. A key factor in exploiting new technology to the fullest extent will be telecommunications. However, libraries must develop a logical level of message switching protocols, that is, some standardization of communication controls.

In a time of financial stringency libraries need to carefully assess the cost of computer installations lest the price exceed what a library can afford. Fortunately the advent of microcomputers and minicomputers has placed computer based automation well within the range of even the smallest libraries.

Thus for OCUL libraries to take full advantage of the new technology, the greatest needs are as follows: In order to develop more computer expertise, incentives, perhaps in the form of scholarships, should be provided to encourage librarians to take computer training. The second need is that a common computer protocol be developed so that

libraries having a variety of installations may access each other's data bases.

13.5 LONG-TERM SPACE AND STORAGE PLANNING

On occasion the question of creating a provincial storage library has arisen within OCUL.

The inexorable advance of book stacks over floor space creates crises periodically in research libraries. When a library collection reaches a certain size and maturity the provision of compact storage space has to be considered. The larger OCUL libraries are now at that stage. Storage space, maximizing cubic utilization, can be constructed for only a fraction of the cost of regular library space. The issue is whether compact storage space should be an adjunct to each library or provided in one large provincial storage building.

In the planning of any storage library a number of factors need to be examined. Among those are the selection of material, changing location symbols on public catalogue records, transporting the volumes, retrieving material, and overhead and trucking costs.

In any consideration of storage space requirements, the long-term site needs of the central library on each campus should not be neglected. Since building options on university campuses diminish with the passage of time it is important to put a caveat on land adjacent to the central library building for its general expansion. In the foreseeable future, book collections will continue to grow. Should there in

time be less reliance on the book in favour of the compacting of information in microforms and optical videodiscs, then book stack space will be replaced by batteries of viewing machines with their numerous users.

Every research library should now have site plans for at least fifty years. OCUL made a study of space needs some years ago. This should be reassessed with particular attention to the provision of compact storage space.

The BLC in collaboration with the OCUL should study the long-term space requirements of libraries with a view to proposing solutions.

13.6 CLARIFICATION OF RELATIONSHIPS

The Council (COU) has delegated its responsiblity to the Board (BLC). The latter, which was established primarily to direct the operation of the Office of Library Coordination, had as its functions to establish policy and budgets for the Office, and to review and evaluate the work of the Office. The Board was set up at a time when a highly centralized provincial system was envisioned, a bibliographic centre with a union catalogue which would enable close monitoring of collection development. This model did not materialize and with the closing of the Office in October 1980, the Board has been left in limbo. The Board's only continuing term of reference is "to consult regularly with the Ontario Council of University Libraries".

The Board's function needs to be examined and re-drafted. It might well serve as a forum to which the professoriate and students could direct attention to academic needs that they feel are not adequately being met by libraries. Nor is it sufficient that Board members be conversant with but mute on library matters; the Board should disseminate information on library trends and problems to boards of governors, administrators and deans of universities. More important, the Board could serve as a focus for assembling data and mustering support for lobbying the government in support of libraries in a deteriorating financial situation and a changing technological environment. In summary, the Board's role should be interpretive and supportive.

The membership of the Board should be persons with direct involvement in the current trends in scholarship and in enrolment in universities. Thus, ideal representation would be the chairmen (current, incoming, or past) of such committees within COU as that of the presidents, the deans of graduate studies, and of OCUL. The above representation would provide three members of a proposed Board of five. A fourth should be appointed by COU, preferably a person with long-term affiliation with a campus library committee, or alternatively a person recognized as a scholar who could speak for the research user. The fifth person should be appointed by OCUL from its membership. The recommended term of office would be two years or longer.

APPENDIX

THE IMPACT OF THE NEW TECHNOLOGY

Lack of librarians skilled in computer technology

The exploitation of the new computer technology in Ontario academic libraries is uneven in quality, distribution and effectiveness, and this situation is unlikely to change. The major inhibiting factor in achieving wide exploitation of computer based technology is the lack of skilled personnel knowledgeable in both computer science and library science. With the widespread emphasis on high technology, the few capable graduates are in high demand, and libraries find difficulty competing with the lucrative positions available in industry. As a result, most libraries have a deficiency in personnel capable of evaluating technological innovations for library application, and have difficulty in retaining existing specialists.

Library administrators have been significantly ignoring the provision of incentives and motivation for re-educating existing library personnel. Some libraries have instituted on-site education programmes for their employees, and some provide career paths which would permit capable employees to pursue an interest in computer based library systems, but these are exceptional cases. Even minor incentives such as providing scholarships or research grants to encourage a programme to develop qualified personnel in library automation, both at the professional and paraprofessional levels, should be encouraged.

Some Ontario academic libraries have taken advantage of the research facilities and expertise available for developing and testing pilot project systems within the educational environment, in advance of implementation within the library. Some have developed relationships with the commercial sector, which consequently has benefited from the educational experience provided to their employees; the benefits to participating libraries have been less obvious.

The lack of skilled personnel has partially contributed to a "wait and see" attitude towards new technology, which when directed towards the University of Toronto placed that institution in an unenviable "damned if we do, damned if we don't" situation. If Toronto takes the initiative in evaluating or adopting new technological applications, other institutions appear to feel threatened. and react by suggesting or adopting competitive alternatives. If Toronto does not take the initiative, the other institutions level criticism about the lack of leadership exhibited. Competition with the University of Toronto has been a spurring incentive to other academic libraries, increasing their involvement with new technology.

Cost of internally developed vs. vendor supplied systems

The alternative to developing a systems team of specialists for design, implementation and maintenance of library applications is the purchase of vendor supplied systems modified for the individual institution. Regardless of the approach, the cost is likely to be the same, since the major cost factor has shifted from the equipment to

vendor supplied software. The latter approach, adopting a vendor supplied system, is only of short-term benefit since the rapidity of technological change requires continuous evaluation as new developments emerge. As libraries gain experience, their needs also change, but on-site development is often delayed primarily because of the shortage of skilled personnel.

Computers feasible, affordable and necessary

Fully on-line computer based library data processing systems are not only feasible and affordable, but are likely to become a necessity in the near future. The shift to using computers for library technical processing has nearly eliminated the commercial support for manual systems, especially maintenance of card catalogues. The labour intensity associated with manual systems cannot compete with computer based products in the austerity of the current economic environment. It is vital that libraries institute quality control procedures to ensure that the services provided do not deteriorate. The most cost effective means of ensuring quality control and integrity of library files is the on-site library computer system.

Need for message switching protocols

The key factor in exploiting new technology to the fullest extent in libraries is telecommunications. Front end microprocessors

functioning as communications controllers provide a wide range of capabilities, enabling library computer systems to communicate with other computer systems in such a way that library users, including staff, need never be aware of the communication taking place. The interchange of information is "transparent" to the terminal operator. It is imperative, however, that libraries develop a logical level of message switching protocols, since the remote interrogation of another library's computer records may require a different response depending on the use to be made of the retrieved records. Interlibrary loan queries, for example, do not usually require a full bibliographic record in response, whereas a query for catalogue copy for use in technical processing does. The added dimension to the message communication protocols should be standardized to reduce the complexity required within the communications controller. Several Ontario university libraries are already involved with the National Library in the development of such systems.

Assessing and projecting costs of research

Libraries do not, as a whole, constitute a viable market for competitive commercial ventures in designing automated systems for library applications. This implies that the advantages and benefits of new technology are unlikely to be available to the library community without their own significant investment in research associated with technological exploitation, at least to the levels currently committed. At present, no clear delineation of the research expenditures are

available. Without separation of research and development costs from operating expenditures, it is impossible to assess the cost of current research involvement, nor to project the future costs. In an economic climate of austerity, it becomes more and more difficult to establish and justify priorities associated with research into exploitation of new technology as opposed to the priorities associated with the responsibility of providing library services, and collections, to the institution.

Economic austerity a threat

The trend toward on-site library computer systems combined with reduction in financial support of all academic institutions is a major factor in planning for library automation. Alternative contingency plans should be developed for those libraries not heavily involved with library automation. Those that are dependent on library automation should explore alternatives, recognizing that finite financial limits may be reached which will seriously reduce future development, and even restrict the maintenance of existing levels of computer based library services. Considerable flexibility is required in assessing the utility and affordability of technological systems. No long-term commitments should be made to one system without carefully evaluating alternatives, particularly with the low assurance of success in predicting future developments. In the extreme case, it may be necessary to reconsider providing computer based library services and greater involvement with

institution-wide efforts at rationalizing the exploitation of new technology in a time of financial restraint.

iNET

With the deregulation of interconnection for word processors in the United States in the spring of 1980, communications firms have launched intensive development efforts and promotion campaigns to attract customers for products and services ranging from an electronic mail communications service to complete automated office equipment. Ethernet, iNET, Envoy, On-tyme and Comet are examples. The objective of the commercial firm is to attract the customer to the firm's products and services so that subscribers who commit themselves to a particular network will find switching to an alternate network later more expensive than continuing with the initial subscription. As a result, these networks, at present, are incompatible and multiple participation in more than one network is expensive. No one network has emerged as a universal choice for libraries, although the On-tyme system is favoured by a large number of American libraries. iNET may be an appropriate choice for Ontario libraries but is unlikely to achieve wide acceptability in other areas of Canada unless significant advantages over competing services are available.

Two development strategies are apparent in marketing communications networks. As in any relatively new commercial venture in the computer industry, the next three to five years will obviously be a "shakedown" period with highly competitive systems incorporating a

diversity of "custom tailored" services designed to appeal to specialized groups of customers, of which libraries form one customer base. Some firms will not survive. Others may become more narrowly specialized for particular purposes based on industry sectors, banking services, retail/wholesale services, natural resource industries, publishing, libraries. This trend has already begun. The second development strategy, based more on a product level than a service level, is the development of computer communications systems with multiple internetwork communications capability. Several firms manufacturing word processors have already announced options to permit operation of the equipment with three or four different networks. This trend also is accelerating as new networks develop and as some phase out of existence.

TELIDON

Initially greeted with considerable enthusiasm by the library community, interest in Telidon for library applications has diminished and likely will be treated as an "interesting" passing phenomenon rather than the revolutionary system first envisaged. Telidon has severe limitations not initially appreciated when it was first introduced, in that its strong feature is graphic display of data, not display of text. It is limited to 16 lines of 40 characters each for displaying written text. Telidon's second major strength lies in the economy of transmission achieved through use of a standardized code called alphageometric, which requires fewer characters to be transmitted to display devices. Unfortunately, written text characters do not benefit from

this condensation although geometric visual displays, circles, rectangles, do. The key feature of the Telidon system is its data format analogous to the MARC format well known in libraries. The resolution of data on a visual display unit is superb, and the format has six levels of resolution so that pages or frames (screenfuls) of data created in the Telidon format will not require alteration once created. Accuracy and resolution are functions of the capabilities of the display unit rather than the data base.

Apart from the format, the Telidon system has not resolved any of the present technological limitations associated with data base management systems. Its major contribution will likely be the reduction in cost for a "black box" which will enable a television set located in the home and a keypad to be used to acccess a data base. Some trepidation is currently being expressed by telephone utilities in providing the switching system to enable several thousand telephones to access the same data bases. The major criticism expressed for a similar system field tested in Ohio was the objection to using a house telephone for this purpose and a reluctance to consider installing two telephones in a household.

Telidon data bases have been tested on computers using existing data base management systems with Boolean search capability, and have been accessed using terminals connected through the Canadian packet switching network, DATAPAC, with a standard computer terminal keyboard rather than a keypad. The expected contribution of libraries to Telidon development may involve (1) converting their machine-readable catalogue data bases to the Telidon format, (2) making such data bases

available either through their own computer facilities or that of an information provider and (3) using Telidon terminals for announcements, messages, or graphic self-instruction presentations on library use.

Telidon based systems are unlikely to constitute a major component of current developments and directions of library automation. They will undoubtedly be used to supplement present library services, especially if the terminal units receive wide public acceptance. The potential impact of Telidon is to increase the number of "sophisticated" library users for on-line use of library data bases - users who will then have cheap and convenient computer terminals, albeit somewhat limited in visual display capability for text and limited in two-way interactive capability.

MINICOMPUTERS AND MICROCOMPUTERS

The availability of minicomputers removed cost constraints on medium-size libraries anticipating computer based library services. Prior to 1972 libraries were forced to join together to provide a sufficient volume of customer demand to finance shared and centralized computer based library services. Purchasing computer facilities is attractive in that the demands for computing services, particularly storage for library records, have never decreased in libraries which use computers. There can be no doubt that Ontario academic libraries have contributed significantly to the progress achieved in library automation. In the effort to design, implement, and justify cost effective alternatives to large, centralized bibliographic utilities,

several libraries found themselves in the forefront of developmental research. While individual libraries have benefited from research and development activity, it nevertheless has required personnel and administrative costs, often underestimated, and has led, in some cases, to compensating arrangements with vendors, which arrangements confuse the arguments for cost effectiveness and objective decision-making when evaluating competitive systems.

On the one hand significant improvements in developing software for minicomputer library applications may never be achieved without libraries taking the initiative. On the other hand, compensation in the form of reduced hardware costs by the vendor reduce administrative options and contribute to "locking in" customers to a particular vendor's products.

Nowhere is the vendor strategy more apparent than in the marketing of microcomputer technology. Happily the technology itself provides an alternative through the capability of microcomputers to emulate a computer terminal, another type of microcomputer, or a large computer system. Microcomputers have been used, for example, to communicate with Telidon home terminals as if the terminal were interconnected to a large Telidon information provider computer system. They have also been programmed to react as if they were a "dumb" computer terminal, to communicate with a bibliographic utility such as UTLAS not only displaying library records on a terminal screen, but also saving the records locally for later reuse. Emulation is bound to become a widely adopted strategy in libraries to counter the vendor's

"lock in" marketing strategy and increase the variety of equipment options available.

The microcomputers provide increased computing capability at greatly reduced cost, placing computer based library automation well within the range of even the smallest libraries. Combined with the impressive capabilities of digital communications systems such as DATAPAC which transmits data in packets of characters, geographic distance becomes a negligible cost factor, since charging is based on the amount of data transmitted and received rather than on the time a computer terminal is connected to a computer system. Microcomputers have been used with DATAPAC to increase the rate of data transmission.

Another appealing factor, in addition to providing a purchase option for amortizing the equipment cost of a computer system, is the modularity in design of microcomputer systems. Libraries need only purchase sufficient computing capability to satisfy their immediate needs, with assurance that when their needs increase they will be able to purchase additional capability from a widely available selection of alternatives. This is a considerable change from the initial large scale computer systems when vendors refused to install a computer system for customers if its projected workload was greater than 50% of the computing capacity.

Microcomputers are now widely used in "intelligent" computer terminals, in effect small computers, increasing local editing capabilities, allowing display and keyboarding of bibliographic data in different character sets such as Cyrillic, Arabic, Hebrew, Greek, as well as removing some of the character-by-character processing workload

from central computers which may in themselves be large computer systems, minicomputers, or microcomputers. Some microcomputer terminals are programmed from a central "master" computer which directs the types of activities performed at the "intelligent" terminal.